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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,571	11/21/2003	Koji Shigemura	1670.1020	9396
49455	7590	11/20/2006	EXAMINER	
STEIN, MCEWEN & BUI, LLP			LIN, JAMES	
1400 EYE STREET, NW				
SUITE 300			ART UNIT	
WASHINGTON, DC 20005			PAPER NUMBER	
			1762	

DATE MAILED: 11/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/717,571		SHIGEMURA, KOJI	
	Examiner		Art Unit	
	Jimmy Lin		1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 and 21 is/are pending in the application.
- 4a) Of the above claim(s) 1-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-19 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/26/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/28/2006 has been entered.

Election/Restrictions

2. Applicant's election with traverse of Group III, claims 14-19 in the reply filed on 11/10/2005 is acknowledged. The traversal is on the ground(s) that Group I and Group II are not distinct because claim 3 of Group I requires that the mask is formed by electro-forming. The argument is unconvincing because product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps (MPEP 2113). In addition, a product defined by the process by which it can be made is still a product claim and can be restricted from the process if the Examiner can demonstrate that the product as claimed can be made by another materially different process. Defining the product in terms of a process by which it is made is nothing more than a permissible technique that the Applicant may use to define the invention (MPEP 806.05(f)). Accordingly, etching to form the mask is a materially different process that would form substantially the same structure on the mask. Therefore, Group I and Group II are distinct because the product of Group I can be formed by etching.

3. The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described

in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There is no support for the limitation of “wherein the mask is tensed with a tension that varies depending on a position in the mask”. The specification does provide support for applying different tensions to different sides of the mask to reduce a deviation of a total pitch of apertures and a line deviation [0051].

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 14-17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Utsugi et al. (2002/0150674) in view of Ito et al. (5,652,067) and Martin (4,676,193).

Utsugi teaches a method of manufacturing an organic EL device, the method comprising:
forming a first electrode layer 11 in a predetermined pattern on an insulating substrate 10 [0038], [0044];

forming an organic film comprising at least a patterned emission layer 13 on the first electrode layer [0049];

forming a second electrode layer 15 in a predetermined pattern on the organic film [0038];

wherein the organic film and the second electrode layer are vapor deposited using a deposition mask frame assembly [0053]-[0054],[0058] comprising:

a mask comprising a thin plate 95 in which a predetermined pattern of apertures is formed (Figs. 2-4).

Utsugi does not explicitly teach sealing the electrode layer. However, the Examiner takes Official Notice that it is extremely well known in the art of manufacturing organic EL devices to

apply a sealing layer over the cathode to protect the cathode and the organic materials from harmful effects of air and moisture. See, e.g., Ito, col. 19, lines 30-39. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have sealed the second electrode layer in order to have protected the cathode and organic material from harmful effects.

Utsugi and Ito do not explicitly teach a frame supporting one surface of the mask so that the mask is tensed, wherein all surfaces of the frame facing the one surface of the mask lie in a same first plane, and a cover mask supporting an opposite surface of the mask, wherein all surfaces of the cover mask facing the opposite surface of the mask lie in a same second plane.

Martin discloses a mask assembly that is suitable for vacuum vapor deposition (column 1, lines 13-21 and column 2, lines 54-59). Fig. 7 shows a mask assembly 32 comprising: a mask 40', a frame 34, and a cover mask 88. The mask can be interpreted to have two different surfaces on two different planes. The first surface can be considered the lower plane of the mask, and the second surface can be considered the upper plane of the mask. The cover mask supports one surface of the mask (i.e., the first surface). The part of the cover mask supporting the first surface of the mask is referred to as the raised boss member 98. Since the raised boss member is the only part of the cover mask that faces the first surface of the mask, all the surfaces of the cover mask (i.e., the raised boss member) facing the first surface lie in a same first plane. The same interpretation is applied to the frame. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used the mask assembly of Martin in the EL vacuum evaporation of Utsugi. One would have been motivated to do so with the expectation of using a mask assembly that is dimensionally stable at the operating temperatures of vacuum evaporation.

Claim 15: Utsugi teaches that a mask can contain nickel [0042].

Claim 16: Martin teaches that the mask can be formed by electro-forming (column 1, lines 28-31).

Claim 17: Martin does not explicitly teach that the mask, frame, and cover mask can be joined together by welding in the embodiment of Fig. 7. However, Martin does teach in a different embodiment that parts of the mask can be joined together by welding (column 10, lines 22-32). The selection of something based on its known suitability for its intended use has been

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held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have welded together the mask, frame, and cover mask in the embodiment of Fig. 7 with a reasonable expectation of success because Martin teaches that it is suitable in the art to join parts of the mask together by welding.

Claim 21: Martin teaches that the mask has substantially uniform tension (abstract). In other words, the tension of the mask may not be completely uniform. Thus, the tension of the mask may vary depending on a position in the mask.

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Utsugi '674 in view of Ito '067 and Martin '193, as applied to claim 14 above, and further in view of Yamada et al. (U.S. Publication 2001/0019807).

Utsugi, Ito, and Martin are discussed above, but do not explicitly teach that the mask can be completely formed of nickel or an alloy of nickel and cobalt.

Yamada teaches a method of vapor depositing EL materials with a mask, wherein the mask can be made of a metal such as nickel [0022]. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have made the vapor deposition mask of Utsugi and Martin out of nickel with a reasonable expectation of success because Yamada teaches that nickel masks are suitable in the art for vapor deposition.

9. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Utsugi et al. (2002/0150674) in view of Ito et al. (5,652,067) and Martin (4,676,193), as applied to claim 17 above, and further in view of Kitazume (2002/0025406).

Claim 18: Utsugi, Ito, and Martin are discussed above, but do not explicitly teach that the mask, frame, and cover mask are joined by spot welding. However, Kitazume teaches that spot welding is a suitable method for joining the pieces of a shadow mask used for vapor deposition to form organic EL devices [0004], [0010]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used spot welding as

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the particular method of joining the mask pieces of Martin with a reasonable expectation of success because spot welding is recognized in the art as a suitable method for joining the pieces of a shadow mask used for vapor deposition to form organic EL devices. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Claim 19: The welding pitch may be 1 mm [0035].

Response to Arguments

10. Applicant's arguments filed 9/28/2006 have been fully considered but they are not persuasive.

Claims 14-17 and 20 as rejected over Utsugi '674, Ito '067, and Martin '193:

The Applicant argues that Martin does not teach the feature "wherein all surfaces of the cover mask facing the one surface of the mask lie in a same first plane". However, the interpretation of the claim and of Martin is discussed above.

The Applicant argues that Utsugi, Ito, and Martin do not teach the feature "wherein the mask is formed of nickel or an alloy of nickel and cobalt". However, the claimed feature does not limit the mask to be completely formed of such materials. In response to this argument, separate rejections have been made on the interpretations 1) that the mask can contain such materials and 2) that the mask is made completely of such materials.

The Applicant argues that Martin does not teach the feature "wherein the mask, the frame, and the cover mask are joined together by welding" because Martin teaches welding in the embodiment of Figs. 1-6 and not in the alternative embodiment of Fig. 7. However, the rejection has been modified to clarify the rejection. See above discussion.

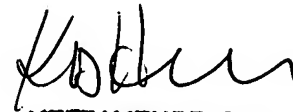
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is 571-272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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KEITH HENDRICKS
PRIMARY EXAMINER